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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,343	12/31/2003	Sumit Roy	42P16726	8209

59796 7590 06/15/2007

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EXAMINER	
PHU, PHUONG M	
ART UNIT	**PAPER NUMBER**
2611	
MAIL DATE	**DELIVERY MODE**
06/15/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/749,343	Applicant(s) ROY ET AL.	
	Examiner Phuong Phu	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-3, 5, 6, 13-15, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Darby et al (7,215,698) in view of Friedmann (5,822,362).

-Regarding to claim 1, see figures 1, 5 and 7, and col. 2, lines 50-65, col. 6, line 52 to col. 7, line 8, col. 8, line 45 to col. 10, line 3, Darby et al discloses a method (70) (see figure 7) for communicating with other devices (72) in a multi-band ultra-wideband (MB-UWB) network.

Darby et al does not teach procedure of selecting a frequency hopping code (FHC) for communicating with the other devices, wherein the FHC defines a sequence of two or more pulses over two or more frequencies, as claimed.

However, Darby et al teaches procedure (8, 10) (see figure 1) of selecting hopped frequencies for communicating with the other devices wherein the hopped frequencies is generated by a hopped frequency oscillator (8) being controlled by a control (10) in a pseudo random fashion (see col. 6, lines 55-60).

Friedmann teaches a hopped frequency generator (60) being controlled by a controller (26) for selecting and generating hopped frequencies wherein the control selects a frequency hopping code (62) which defines a sequence of two or more pulses over the selected hopped frequencies in a pseudo random fashion (see figure 1, col. 7, lines 43-55).

Since Darby et al does not teach in detail how the hopped frequency oscillator (8) and the control (10) are implemented in selecting and generating the hopped frequencies, it would have been obvious for one skilled in the art to implement Darby et al in such a way that the hopped frequency oscillator (8) would be implemented with a hopped frequency generator and the control (10) with a controller for controlling the hopped frequency generator, as taught by Friedmann, wherein the controller would select a frequency hopping code which defines a sequence of two or more pulses over the selected hopped frequencies in a pseudo random fashion for generating the hopped frequencies, so that with such the implementation, the hopped frequencies would be generated as required.

With such the implementation, Darby et al in view of Friedmann teaches a procedure of selecting the frequency hopping code (FHC) for communicating with the other devices, wherein the FHC defines a sequence of two or more pulses over the selected hopped frequencies, namely over two or more frequencies, as claimed.

-Regarding to claim 2, as applied to claim 1, Darby et al in view of Friedmann teaches that the FHC can be configurable to define a sequence of two or more pulses over two or more frequencies from a set of three or more frequencies occupied in a system bandwidth "SYSTEM BANDWIDTH" (see Darby et al, figure 5, col. 9, lines 3-33).

-Regarding to claim 3, as applied to claim 1, Darby et al in view of Friedmann teaches that a frequency hopping code (FHC) is capably selected from a set of predetermined FHC's which are capably generated by the controller (see Friedmann, col. 7, lines 45-55), and the set of predetermined FHC's inherently should contains sequences defining possible hopped frequencies occupied in a system bandwidth "SYSTEM BANDWIDTH", and Darby et al, figure 5, col. 9,

lines 3-33). Or in another, Darby et al in view of Friedmann teaches procedure of selecting a frequency hopping code (FHC) from a set of predetermined FHC's.

-Regarding to claim 5, Darby et al in view of Friedmann teaches a procedure capable of encoding a communication, via a device (8) and an associated mixer (see Darby et al, figure 1) to transmit using the selected FH.

-Regarding to claim 6, Darby et al in view of Friedmann teaches a procedure capable of decoding a communication received, via device (26) and an associated mixer (24) (see Darby et al, figure 2, col. 7, lines 12-18), using the selected FHC (see Friedmann, (50, 60, 26) of figure 1).

-Regarding to claim 13, as similarly applied to claims 1-3, 5 and 6 set forth above and herein incorporated, Darby et al discloses Darby et al discloses a method (70) (see figure 7) for communicating with other devices (72) in a multi-band ultra-wideband (MB-UWB) network.

Darby et al does not teach a storage medium comprising content which, when executed by an accessing machine, causes the accessing machine to select a frequency hopping code (FHC) for communicating with other devices in a multi-band ultra-wideband (MB-UWB) network, wherein the FHC defines a sequence of two or more pulses over two or more frequencies, as claimed.

However, Darby et al teaches procedure (8, 10) (see figure 1) of selecting hopped frequencies for communicating with the other devices wherein the hopped frequencies is generated by a hopped frequency oscillator (8) being controlled by a control (10) in a pseudo random fashion (see col. 6, lines 55-60).

Friedmann teaches a hopped frequency generator (60) being controlled by a controller (26) for selecting and generating hopped frequencies wherein the control selects a frequency hopping code (62) which defines a sequence of two or more pulses over the selected hopped frequencies in a pseudo random fashion (see figure 1, col. 7, lines 43-55).

Since Darby et al does not teach in detail how the hopped frequency oscillator (8) and the control (10) are implemented in selecting and generating the hopped frequencies, it would have been obvious for one skilled in the art to implement Darby et al in such a way that the hopped frequency oscillator (8) would be implemented with a hopped frequency generator and the control (10) with a controller for controlling the hopped frequency generator, as taught by Friedmann, wherein the controller would select a frequency hopping code which defines a sequence of two or more pulses over the selected hopped frequencies in a pseudo random fashion for generating the hopped frequencies, so that with such the implementation, the hopped frequencies would be generated as required.

Further, with such the implementation, Darby et al in view of Friedmann teaches that the controller is configurable to comprise a storage medium (28) (see Friedmann, figure 1, col. 6, lines 35-41, col. 7, lines 53-55) comprising content which, when executed by an accessing machine, causes the accessing machine to select a frequency hopping code (FHC) for communicating with other devices in a multi-band ultra-wideband (MB-UWB) network, wherein the FHC defines a sequence of two or more pulses over the hopped frequencies, or namely over two or more frequencies.

-Claim 14 is rejected with similar reasons set forth for claim 2.

-Claim 15 is rejected with similar reasons set forth for claim 3.

-Claim 17 is rejected with similar reasons set forth for claim 5.

-Regarding to claim 18, see figures 1, 5 and 7, and col. 2, lines 50-65, col. 6, line 52 to col. 7, line 18, col. 8, line 45 to col. 9, line 61, Darby et al discloses a method (60) (see figure 6) for communicating with other devices (62) in a multi-band ultra-wideband (MB-UWB) network.

Darby et al does not teach procedure of selecting a frequency hopping code (FHC) for communicating with the other devices, wherein the FHC defines a sequence of two or more pulses over two or more frequencies, as claimed.

However, Darby et al teaches procedure (26, 28) (see figure 2) of selecting hopped frequencies for communicating with the other devices wherein the hopped frequencies is generated by a hopped frequency oscillator (26) being controlled by a control (28) in a pseudo random fashion (see col. 6, lines 55-60, col. 7, lines 8-18).

Friedmann teaches a hopped frequency generator (60) being controlled by a controller (26) for selecting and generating hopped frequencies wherein the control selects a frequency hopping code (62) which defines a sequence of two or more pulses over the selected hopped frequencies in a pseudo random fashion (see figure 1, col. 7, lines 43-55).

Since Darby et al does not teach in detail how the hopped frequency oscillator (26) and the control (28) are implemented in selecting and generating the hopped frequencies, it would have been obvious for one skilled in the art to implement Darby et al in such a way that the hopped frequency oscillator (26) would be implemented with a hopped frequency generator and the control (28) with a controller for controlling the hopped frequency generator, as taught by Friedmann, wherein the controller would select a frequency hopping code which defines a sequence of two or more pulses over the selected hopped frequencies in a pseudo random fashion

for generating the hopped frequencies, so that with such the implementation, the hopped frequencies would be generated as required.

Further, with such the implementation, Darby et al in view of Friedmann teaches that the controller is configurable to comprise a storage medium (28) (see Friedmann, figure 1, col. 6, lines 35-41, col. 7, lines 53-55) comprising content which, when executed by an accessing machine, causes the accessing machine to select a frequency hopping code (FHC) for communicating with other devices in a multi-band ultra-wideband (MB-UWB) network, wherein the FHC defines a sequence of two or more pulses over the hopped frequencies, or namely over two or more frequencies; and wherein the storage medium comprises content which, when executed by the accessing machine, causes the accessing machine to decode a communication received using the selected FHC.

3. Claims 4 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Darby et al in view of Friedmann and further in view of McCorkle (7,177,31).

-Regarding to claims 4 and 16, Darby et al in view of Friedmann teach the claimed invention, except Darby et al in view of Friedmann does not teach procedure of selecting a frequency hopping code (FHC) from a set of predetermined FHC's for communicating with other devices in an Institute of Electrical and Electronics Engineers (IEEE) 802.15.3 network.

Using protocol standard IEEE 802.15.3 in a network for wireless communication is well-known in the art. For instance, McCorkle using IEEE 802.15.3 for his communication network (see col. 3, lines 20-27, col. 18, lines 45-57).

Since Darby et al in view of Friedmann does not teach in detail what the protocol standard is used in the network, it would have been obvious for one skilled in the art to

implement Darby et al in view of Friedmann in such a way that the network would use IEEE 802.15.3 for the wireless communication, so that the wireless communication would carried out as desired.

With such the implementation, Darby et al in view of Friedmann and McCorkle teaches procedure of selecting a frequency hopping code (FHC) from a set of predetermined FHC's for communicating with other devices in an Institute of Electrical and Electronics Engineers (IEEE) 802.15.3 network, as claimed.

4. Claims 7-12 and 19-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCorkle in view of Friedmann.

-Regarding to claim 7, McCorkle discloses an electronic device (see figure 5) comprising:

an antenna (505); and a transceiver (included in (500)), coupled with the antenna, to communicate with other devices devices in a multi-band ultra-wideband (MB-UWB) network (see col. 7, lines 30-35, col. 13, lines 38-67).

McCorkle does not teach a hopping code engine coupled with the transceiver, the hopping code engine to select a frequency hopping code (FHC) for communicating with the other devices in the multi-band ultra-wideband (MB-UWB) network, wherein the FHC defines a sequence of two or more pulses over two or more frequencies, as claimed.

However, McCorkle teaches that the transceiver is coupled to an FM encoder (525) (see figure 5), under a control by controller (595), configurable to generate frequency hopped modulation signals for communicating with the other devices in the network (see col. 18, line 45 to col. 19, line 22).

Friedmann teaches an encoder (50, 60, 26) of encoding data with hopped frequencies, generated by a frequency hop synthesizer (60), to provide frequency hopped modulation signals wherein the encoder is controlled by a hopping code engine (26), as a controller, of selecting a frequency hopping code which defines a sequence of two or more pulses over the hopped frequencies (see figure 1, col. 7, lines 43-55).

Since McCorkle does not teach in detail how the FM encoder (525) is implemented in generating the frequency hopped modulation signals, it would have been obvious for one skilled in the art to implement McCorkle in such a way that the FM encoder (525) would be implemented with an encoder of encoding data with hopped frequencies, generated by a frequency hop synthesizer, to provide frequency hopped modulation signals, and the controller (595) would be implemented, as a controller, to control the encoder by selecting a frequency hopping code which defines a sequence of two or more pulses over the hopped frequencies, as taught by Friedmann, so that frequency hopped modulation signals would be provided as required.

With such the implementation, McCorkle in view of Friedmann teaches the hopping code engine (595) coupled with the transceiver, the hopping code engine selecting a frequency hopping code (FHC) for communicating with the other devices in the multi-band ultra-wideband (MB-UWB) network, wherein the FHC defines a sequence of two or more pulses over the hopped frequencies, or namely, over two or more frequencies, as claimed

McCorkle in view of Friedmann does not teach that the antenna is a dipole antenna, as claimed.

However, implementing antenna as a dipole antenna for communication is well-known in the art, and the examiner takes Official Notice.

Since McCorkle in view of Friedmann does not teach in detail how the antenna is implemented, it would have been obvious for one skilled in the art to selectably implement the antenna as a dipole antenna so that the antenna would be provided as required.

-Regarding to claim 8, in McCorkle in view of Friedmann teaches, the FHC is inherently configurable to define a sequence of two or more pulses over two or more frequencies from a set of three or more frequencies over the ISM band (2.4 to 2.5 GHz) (see McCorkle, col. 18, lines 45-50).

-Regarding to claim 9, McCorkle in view of Friedmann teaches that the hopping code engine is configurable to select select a frequency hopping code (FHC) from a set of predetermined FHC's indicating three or more frequencies over the ISM band (2.4 to 2.5 GHz) (see McCorkle, col. 18, lines 45-50).

-Regarding to claim 10, McCorkle in view of Friedmann teaches that the hopping code engine is configurable to select a frequency hopping code (FHC) from a set of predetermined FHC's for communicating with other devices in an Institute of Electrical and Electronics Engineers (IEEE) 802.15.3 network (see McCorkle, col. 3, lines 20-27, col. 18, lines 45-57).

-Regarding to claim 11, as applied to claims 7 and 9, McCorkle in view of Friedmann teaches that the hopping code engine is configurable to encode a communication to transmit using the selected FHC.

-Regarding to claim 12, McCorkle in view of Friedmann teaches that the hopping code engine (595) is configurable to decode a communication received using the selected FHC (see McCorkle, (555, 595) figure 5).

-Regarding to claim 19, McCorkle discloses an apparatus (see figure 5) comprising:

an antenna (505); and a transceiver (included in (500)), coupled with the antenna, to communicate with other devices devices in a multi-band ultra-wideband (MB-UWB) network (see col. 7, lines 30-35, col. 13, lines 38-67).

McCorkle does not teach a control logic coupled with the transceiver, the hopping code engine to select a frequency hopping code (FHC) for communicating with the other devices in the multi-band ultra-wideband (MB-UWB) network, wherein the FHC defines a sequence of two or more pulses over two or more frequencies, as claimed.

However, McCorkle teaches that the transceiver is coupled to an FM encoder (525) (see figure 5), under a control by controller (595), configurable to generate frequency hopped modulation signals for communicating with the other devices in the network (see col. 18, line 45 to col. 19, line 22).

Friedmann teaches an encoder (50, 60, 26) of encoding data with hopped frequencies, generated by a frequency hop synthesizer (60), to provide frequency hopped modulation signals wherein the encoder is controlled by a hopping code engine (26), as a controller, of selecting a frequency hopping code which defines a sequence of two or more pulses over the hopped frequencies (see figure 1, col. 7, lines 43-55).

Since McCorkle does not teach in detail how the FM encoder (525) is implemented in generating the frequency hopped modulation signals, it would have been obvious for one skilled

in the art to implement McCorkle in such a way that the FM encoder (525) would be implemented with an encoder of encoding data with hopped frequencies, generated by a frequency hop synthesizer, to provide frequency hopped modulation signals, and the controller (595) would be implemented, as a controller, to control the encoder by selecting a frequency hopping code which defines a sequence of two or more pulses over the hopped frequencies, as taught by Friedmann, so that frequency hopped modulation signals would be provided as required.

With such the implementation, McCorkle in view of Friedmann teaches the controller (595), (considered here equivalent with the limitation "control logic"), coupled with the transceiver, the controller selecting a frequency hopping code (FHC) for communicating with the other devices in the multi-band ultra-wideband (MB-UWB) network, wherein the FHC defines a sequence of two or more pulses over the hopped frequencies, or namely, over two or more frequencies, as claimed

McCorkle in view of Friedmann does not teach that the antenna is a dipole antenna, as claimed.

However, implementing antenna as a dipole antenna for communication is well-known in the art, and the examiner takes Official Notice.

Since McCorkle in view of Friedmann does not teach in detail how the antenna is implemented, it would have been obvious for one skilled in the art to selectably implement the antenna as a dipole antenna so that the antenna would be provided as required.

-Claim 20 is rejected with similar reasons set forth for claim 8.

-Claim 21 is rejected with similar reasons set forth for claim 9.

-Claim 22 is rejected with similar reasons set forth for claim 10.

-Claim 23 is rejected with similar reasons set forth for claim 11.

-Claim 24 is rejected with similar reasons set forth for claim 12.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong Phu whose telephone number is 571-272-3009. The examiner can normally be reached on M-F (8:00 AM - 4:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Phuong Phu
Primary Examiner
Art Unit 2611

Phuong Phu

Phuong Phu
06/07/07

PHUONG PHU
PRIMARY EXAMINER